

REMARKS

Applicants' attorneys thank the Examiner for telephone conversations on December 11, 12, and 17, 2002, in which the Restriction Requirement and Election of Species was discussed.

Claims 20-52 which were withdrawn from consideration, are now cancelled without prejudice. Applicants reserve the right to file the subject matter of claims 20-52 in one or more continuation applications.

Claims 1-19 remain pending in the application. Claims 6 and 14 remain withdrawn.

Rejection of Claims 1-5, 7-13, and 15-19 under 35 U.S.C. §112, ¶2

Claims 1-5, 7-13, and 15-19 were rejected under 35 U.S.C. §112, ¶2. The Office Action states that "claim 1 is indefinite since the recited property defining the material fails to define a time parameter."

Applicants have amended claim 1 to recite a time of "for at least about 10 min." Thus, Applicants respectfully request that the rejection of claim 1 be withdrawn. The remaining claims depend, either directly or indirectly, from claim 1, and Applicants respectfully request that the rejection of these claims also be withdrawn.

The Office Action also rejected claims 18 and 19 under 35 U.S.C. §112, ¶2 as being unclear in reference to the surface area and the temperature.

Claim 1 recites that the composition retains an average surface area of at least about 100 m²/g, when the material is heated to a temperature of 700°C for at least about 10 min. Claims 18 and 19 additionally recite that the material of claim 1, when further heated to a higher temperature (1100°C and 1300°C, respectively), is able to retain an average surface area of at least about 20 m²/g at that higher temperature. It is therefore believed that the scope of claims 18 and 19 are clear as presented, and withdrawal of the rejection of these claims is respectfully requested.

Rejection of Claims 1-5, 7, and 15-19 Under 35 U.S.C. §102(b)

Claims 1-5, 7, and 15-19 were rejected under 35 U.S.C. §102(b) as being anticipated by El-Shall, et al., U.S. Patent No. 5,580,655 ("El-Shall") as evidenced by Hawley's Condensed

Chemical Dictionary. The Office Action asserts that El-Shall discloses silica nanoparticles able to retain a high surface area as the temperature of the nanoparticles is raised to the melting point of silica, about 1700°C, as evidenced by Hawley's Condensed Chemical Dictionary.

El-Shall discloses agglomerated silica nanoparticles formed by heating silica to 600°C (e.g., column 1, lines 6-12). However, El-Shall does not inherently disclose a composition comprising a material able to retain an average surface area of at least about 100 m²/g when the material is heated to 700°C. Nowhere does El-Shall disclose or suggest particles that can withstand temperatures of greater than 700°C. El-Shall describes a combustion process that is expected to result in agglomerated particles. El-Shall additionally describes the particles produced by such a method as "silica nanoparticles agglomerated into a three-dimensional web-like structure (col. 1, lines 6-7)." Due to such agglomeration, as the temperature of the composition is raised, the closeness of the particles in the agglomerated structure will facilitate sintering of the particles and a corresponding reduction in the surface area of the particles. Thus, not only has the Patent Office failed to show that El-Shall necessarily inherently results in the composition as claimed, Applicants submit that the particles of El-Shall would inherently not meet the limitation of retaining a surface area of at least about 100 m²/g when the temperature of the material is raised to temperatures greater than 600°C.

Thus, Claim 1 is believed to be patentable over El-Shall, and it is respectfully requested that the rejection of claim 1 be withdrawn. Claims 2-5, 7, and 15-19 depend, either directly or indirectly, from claim 1, and it is respectfully requested that the rejection of these claims also be withdrawn. Although differences between El-Shall and these claims were discussed in this section, these discussions serve only to demonstrate that El-Shall cannot inherently result in the invention as claimed. The discussion of agglomeration and other properties in this section should not be seen as a recitation of the limitations of the claims.

Rejection of Claims 1-5, 7-10, 12-13, and 15-19 Under 35 U.S.C. §102(b) or §103(a)

Claims 1-5, 7-10, 12-13, and 15-19 were rejected under 35 U.S.C. §102(b) as being anticipated by, or under 35 U.S.C. §103(a) as being obvious over, JP 03-069506 as evidenced by AN-1991-129609 and JPO Abstract JP403069506 (collectively, "the Ricoh abstracts").

Applicants do not concede to the accuracy of the translation of the Japanese-language references. Due to the poor nature of the translations of the Ricoh abstracts provided by the Patent Office, Applicants are unable to determine what process is used in the Ricoh abstracts, and the physical properties of any particles that are produced by such a process. In particular, Applicants do not see where in any of the Ricoh abstracts is there a teaching or suggestion that any particles produced by the methods of the Ricoh abstracts will result in particles that can be heated to at least 700°C without affecting the particle as recited in claim 1, nor do the Applicants see where in any of the Ricoh abstracts are particles having an average surface area of at least about 100 m²/g suggested or disclosed. Thus, Applicants respectfully request that the rejection of claim 1 be withdrawn. Claims 2-5, 7-10, 12-13, and 15-19 depend, either directly or indirectly from claim 1, and it is respectfully requested that the rejection of those claims also be withdrawn.

Further, in the second and third paragraph of Section 8 of the Office Action, the Patent Office discusses various methods of making compounds disclosed by Ricoh, and appears to equate these methods of making with recitation of the instant claims. Applicants note that none of the instant claims recite or should be intended to be limited to any methods of making. Thus, the relevance of these particular statements as they are intended to apply to the language of the instant claims is not understood by the Applicants.

It is believed that the rejection of the above claims has been overcome, and withdrawal of the rejection is respectfully requested. If the rejection is maintained, then clarification is additionally respectfully requested of the rejection, as discussed in the foregoing paragraph.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee

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occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,
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MARKED-UP CLAIMS

1. (Amended) A composition comprising a material having an average particle size of less than about 100 nm wherein the material, when heated to 700°C for at least about 10 min, retains an average surface area of at least about 100 m²/g.